



RAND WATER

Metsimaholo Water Quality Report
1 Month

20 February 2021 to 22 March 2021

Date generated: 08 April 2021

							Descriptive Statistics		
Determinands	Measurement Units	Risks	SANS 241:2015 standard limits (1)	No of results	Required compliances to SANS 241:2015 spec(%)	Achieved compliances to SANS 241:2015 spec(%)	Mean	Standard Deviation	Mean + 3 Std deviations
Microbiological determinands									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	Non-detect	50	99.0%	98.00%	0	0.28	1
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	50	95.0%	100%	0	0.42	1
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	50	95.0%	100%	2	4.91	16
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	no data	99.0%	no data	no data	no data	no data
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	no data	99.0%	no data	no data	no data	no data
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	68	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	6	95.0%	100%	6.33	0.82	8.78
Conductivity	(mS / m)	Aesthetic	≤ 170	24	95.0%	100%	22.92	1.91	28.64
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	6	95.0%	100%	159.17	10.68	191.22
Turbidity	(NTU)	Operational	≤ 1	24	95.0%	100%	0.29	0.04	0.42
Turbidity	(NTU)	Aesthetic	≤ 5	24	95.0%	100%	0.29	0.04	0.42
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	24	95.0%	100%	8.07	0.15	8.52
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	24	95.0%	100%	0.10	0.00	0.10
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	3	95.0%	100%	16.67	5.51	33.19
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	50	97.0%	100%	1.51	0.68	3.55
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	n/a	97.0%	n/a	n/a	n/a	n/a
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	2	97.0%	100%	0.40	0.03	0.48
Nitrate	(mg / L as N)	Acute health	≤ 11	24	99.0%	100%	0.83	0.22	1.48
Nitrite	(mg / L as N)	Acute health	≤ 0.9	24	99.0%	100%	0.03	0.00	0.03
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	23	99.0%	100%	0.13	0.13	0.52
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.2	50	95.0%	92.00%	1.51	0.68	3.55
Sodium	(mg / L as Na)	Aesthetic	≤ 200	6	95.0%	100%	10.50	2.87	19.11
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	6	95.0%	100%	19.67	2.25	26.42
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	6	99.0%	100%	19.67	2.25	26.42
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	6	95.0%	100%	0.01	0.01	0.03
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	6	95.0%	100%	18.33	21.65	83.28
Antimony	(µg / L as Sb)	Chronic health	≤ 20	2	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	2	97.0%	100%	0.80	0.00	0.80
Barium	(µg / L as Ba)	Chronic health	≤ 700	6	97.0%	100%	41.33	3.50	51.84
Boron	(µg / L as B)	Chronic health	≤ 2400	6	97.0%	100%	3.45	1.62	8.30
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	2	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	6	97.0%	100%	0.50	0.00	0.50
Copper	(µg / L as Cu)	Chronic health	≤ 2000	6	97.0%	100%	16.75	30.24	107.48
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	6	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	6	97.0%	100%	100.00	0.00	100.00
Iron	(µg / L as Fe)	Aesthetic	≤ 300	6	95.0%	100%	100.00	0.00	100.00
Lead	(µg / L as Pb)	Chronic health	≤ 10	2	97.0%	100%	2.00	0.00	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	6	97.0%	100%	2.45	0.70	4.54
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	6	95.0%	100%	2.45	0.70	4.54
Mercury	(µg / L as Hg)	Chronic health	≤ 6	2	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	6	97.0%	100%	3.00	0.00	3.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	2	97.0%	100%	4.00	0.00	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	2	97.0%	100%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	2	97.0%	100%	5.35	0.64	7.26
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	2	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	3	97.0%	100%	64.67	23.86	136.25
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	3	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	3	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	3	97.0%	100%	15.00	4.36	28.08
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	3	97.0%	100%	0.47	0.17	0.98
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	4	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	6	not applicable	100%	19.00	7.07	40.21
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	6	not applicable	100%	74.33	25.26	150.10
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	6	not applicable	100%	6.60	1.73	11.79
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	6	not applicable	100%	4.02	1.22	7.66
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	7	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	7	not applicable	100%	1.00	0.00	1.00

Risks	Required compliances to SANS 241: 2015 standard	Overall Compliances - SANS 241: 2015 standard
Acute health microbiological	99.0%	98.00%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	100%
Operational	95.0%	98.53%

- Notes
 (1) Specification SANS 241 date of effect : 1 July 2016
 (2) Measured at water treatment works exit points
 (3) (NO₂/0.9 + NO₃/11)
 (4) Residual disinfectant : Results from the chlorinated system = Free available chlorine
 (5) (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)
 (6) Customer request: Results not included in the risk indices compliance calculations and limits based on SANS 241:2006
 (7) Customer request: Results not included in the risk indices compliance calculations and limits based on RW Internal Spec
 **** Determinands with no data are due to instrument breakdown****